



Project: Make your own mini-hovercraft!

Purpose

The purpose of this activity is to create a mini-hovercraft. In the process you will have to practice good safety habits, complete directions accurately, and apply the principals of friction for movement.

Background

Want to know what to do with those old CDs? Make a mini-hovercraft. Learn how friction and air pressure can power a vehicle.

Materials

- ❑ A CD that is no longer needed for other purposes.
- ❑ Household silicone caulk or glue
- ❑ A bottle cap from a disposable water bottle, the type with a push/pull shutoff valve.
- ❑ Balloons.

Procedure

1. ***Safety first!***
 - A. Be sure to read and follow the safety requirements and recommendations for the items you are using and the area where you are working.
 - B. Always work in a well ventilated area when working with silicone caulk or glue. Also, note that some caulks and glues require adequate skin protection as well. Always follow the label on the product.
2. ***Read all the directions and assemble all the materials before you begin.***
 - A. Be sure you understand the design of the mini-hovercraft.
 - B. If you decide to make the hovercraft larger or smaller, you will have to change some of the materials to be larger or smaller as well. Write out all those changes before you begin.

3. ***Attach bottle top to CD.***

- A. In a well-ventilated room, glue the bottle cap to the center of one side of the CD. (See fig. 1 and fig. 2.)
- B. Let the glue dry.



Figure 1: Apply glue to CD.



Figure 2: Attach bottle top to CD.

4. **Attach power source (balloon).**
- A. Be sure the valve on the bottle top is closed.
 - B. Inflate the balloon and twist the end closed. Do not tie off the balloon.
 - C. Place the open end of the balloon over the bottle cap valve. (See fig. 3 and fig. 4.)



Figure 3: Blow up the balloon.



Figure 4: Attach inflated and twisted balloon to bottle top valve.

5. ***Power up your mini-hovercraft.***
 - A. Untwist the balloon.
 - B. Place the CD on a smooth surface.
 - C. Open the valve. (See fig. 5)



Figure 5: Untwist balloon and open valve of bottle top.

6. ***Watch your mini-hovercraft go!***
 - A. The CD should move about freely, riding on the cushion of air from the balloon. (See fig.6)



Figure 6: Have fun watching your hovercraft go!

Congratulations. You've just built your very own mini-hovercraft!

Mini-Hovercraft Activity Check List

Steps to Make a Mini-Hovercraft	Date/Time Started	Date/Time Completed
1. Safety first!		
2. Read all the directions and assemble all the materials before you begin.		
3. Attach bottle top to CD.		
4. Attach power source (balloon).		
5. Power up your mini-hovercraft.		
6. Watch your mini-hovercraft go!		